$a_n = \dfrac{2^{n+4}}{5^n} = \dfrac{2^4 2^n}{5^n} = 16\left(\frac{2}{5}\right)^n$,

so $\lim\limits_{n\to\infty} a_n = 16 \lim\limits_{n\to\infty} \left(\frac{2}{5}\right)^n = 16 \cdot 0 = 0$

by $\lim\limits_{n\to\infty} r^n = \begin{cases} 0 & \text{if} \quad -1 < r < 1 \\ 1 & \text{if} \quad r = 1 \end{cases}$ with $r = \frac{2}{5}$. Converges